

BELVOSIA BICINCTA (DIPTERA: TACHINIDAE) PARASITIZING LARVAE OF THE WHITE-LINED SPHINX MOTH IN EASTERN NEW MEXICO¹

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ABSTRACT: A new host record is given for the tachinid fly, *Belvosia bicincta*, parasitizing larvae of the whitelined sphinx moth (*Hyles lineata*).

Belvosia bicincta Robineau-Desvoidy, a large tachinid, is not abundant in eastern New Mexico but has been collected occasionally from a number of flowers. Arnaud (1978) indicated that Lepidoptera of the families Noctuidae and Sphingidae are hosts of this species, but the only records are from Costa Rica (noctuid) and Jamaica (sphingid). No records are given by him or others of *B. bicincta* parasitizing *Hyles lineata* (F.) (the whitelined sphinx moth). The information in this report, therefore, represents a new record from the United States.

During the third week of May 1981, an unusually large population of whitelined sphinx moth larvae was observed thirty miles northeast of Roswell, New Mexico along U.S. highway 70. Hundreds of larvae were observed on the roadway and feeding on roadside plants. Most were feeding on *Guara villosa* Torr. (Woolly Gaura) which was in flower and abundant along that portion of the highway. The majority of the larvae were either penultimate or ultimate larval instars. Some larvae and adults of the whitelined sphinx have been observed each year, but a population of this magnitude was not observed in the ten years previous to this study or the six years following even though frequent observations were made.

Several larvae were collected to determine levels of parasitism. Quart-sized Mason jars were used as rearing chambers. Each jar was provisioned with about three centimeters of moist sand, fresh leaves of *G. villosa*, and five large larvae of *H. lineata*. Plant food for the larvae was replenished as needed. Pupation and adult emergence, which required 2-4 weeks, occurred in the moist sand. Adult moths and parasitic flies were removed upon emergence.

A total of 115 larvae of the whitelined sphinx moth was collected and placed in rearing jars. Fifty eight (50.4%) of these developed and emerged as adults, while 27 (23.5%) died before pupation with no evidence of parasitism. An additional 30 pupated but did not emerge as adults and from

¹Received September 24, 1987. Accepted November 5, 1987.

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these 30 adult flies of *Belvosia bicincta* emerged, yielding a parasitism level of 26%. There was no evidence of multiple parasitism as only one fly emerged from each parasitized pupa.

Adult flies were identified to species by comparison to specimens identified by Dr. D.M. Wood, Central Experimental Farm, Ottawa, Ontario, Canada.

LITERATURE CITED

Arnaud, P.H., Jr. 1978. A host-parasite catalog of North American Tachinidae (Diptera). USDA Misc. Publ. 1319; 860 pp.

BOOKS RECEIVED AND BRIEFLY NOTED

DRAGONFLIES Miller, P.L., 1987. Cambridge Univ. Press. 84 pp. \$24.95.

Number seven in a series of British Naturalists' Handbooks. This small book deals with the natural history and identification of dragonflies and damselflies.

THE BUTTERFLIES OF INDIANA Shull, E.M., 1987. Indiana Univ. Press. 262 pp. \$25.00.

A beautiful book with 50 fine plates, in color, showing 535 specimens of all 149 species found in Indiana. The text is in four parts: I. Brief discussions on the biology of butterflies, methods of collection and preservation, classification and identification, and conservation of habitat and endangered species. II and III are species accounts of all butterflies and skippers in Indiana, and IV is a checklist for the state.

In view of the controversies (?) swirling around the recent surfeit of beautiful books on butterflies (Shapiro, A.M., Book Review (of three such volumes) Ent. News 1986(5): 241-244), it is interesting to note that this current author chooses to follow the taxonomy of Miller and Brown (1981) in their Catalog/Checklist of the Butterflies of America North of Mexico.

MOSQUITOES OF NEW YORK Part II. Genera of Culicidae other than *Aedes* occurring in New York. Means, R.G., 1987. The State Education Dep't./The University of the State of New York. 180 pp. \$11.00 paper. Order from N.Y. State Museum Publications, Albany, NY 12230.

Keys for the identification of adult females, males, and fourth instar larvae are presented for the genera: *Anopheles*, *Psorophora*, *Culex*, *Culiseta*, *Coquillettidia*, *Orthopodomyia*, *Wyeomyia*, *Uranotaenia*, and *Toxorhynchites*. Thirty-two species are reviewed, summarized, keyed, and illustrated. Species treatment includes synonymy, descriptions of adults and immature stages, bionomics, distribution, disease relationships, and pertinent literature. Reduction of mosquito populations through cultural, biological, and chemical means is discussed. Two hundred and three figures are included.